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THE MATERIAL CULTURE OF THE KLAMATH LAKE AND MODOC INDIANS OF NORTHEASTERN CALIFORNIA AND SOUTHERN OREGON

BY

S. A. BARRETT

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INTRODUCTION.

The following information concerning the Lutuami or Klamath Lake and Modoc Indians of northeastern California and southern Oregon was obtained during the summer of 1907 as a part of the work of the Ethnological and Archaeological Survey of California, maintained by the University of California through the generosity of Mrs. Phoebe A. Hearst. These Indians now live almost entirely on Klamath Indian reservation in Oregon,

situated about upper Klamath Lake and in the mountains to the east; except for a part of the Modoc in Oklahoma. It is the object of the present paper to discuss briefly the conditions of aboriginal life among these people, due consideration being given their natural environment and the influence of surrounding peoples upon them.

TERRITORY.

The territory occupied by the Klamath Lake and Modoc Indians lies chiefly in the drainage basins of Upper and Lower Klamath lakes and Tule or Rhett lake. From a point near the confluence of Keen creek with Klamath river the western boundary of their territory probably extended along the watershed separating the Klamath lake and Rogue river drainages, to the foothills of the mountain in which Crater lake is situated. It should be noted, however, that the Klamath, while they feared Crater lake, did go upon certain occasions to the lake and seem not to have been molested there by other Indians. It would seem that the lake was looked upon as a sort of territory of mutual rights by the peoples in its vicinity. They visited it when they desired to acquire great merit in hunting or other pursuits in which supernatural power was necessary. To go and bathe in this wonderful lake was a brave thing to do, and made a man lucky for hunting or other similar pursuits and made him very strong for war. It would appear that the relations formerly existing between the Klamath and the people of the Rogue river drainage were not at all friendly, so that the Klamath seldom ventured as far west as the crest of the range. They did on occasion make up large parties and go up to the crest of the range for the purpose of hunting, but small parties rarely ventured so far. The region for some distance to the west and northwest of Crater lake was also visited by the Klamath for the purpose of gathering berries in season.

On the north the boundary extended as far as to the headwaters of Deschutes river, thus including the whole drainage basin of Klamath marsh.[1] On the east the boundary probably

[1] The Bureau of Ethnology's map in Bulletin 30 gives to the Lutuami territory as far north in the Deschutes drainage as latitude 44. See also volume I of this Bulletin, 779, 1907.

extended far enough to include the drainage into Sycan marsh, and thence on toward the south, passing several miles east of the town of Bly and including the whole of the Sprague river drainage.[2] The southern part of the eastern boundary probably passed somewhat east of Clear lake and around the head of Lost river. The southern boundary was probably the divide between the drainage of Klamath and Rhett lakes and that of Pitt river.

The Lutuami[3] are divided into two slightly different dialectic divisions: the Klamath Lake, usually known simply as Klamath, occupying a comparatively large territory about Upper Klamath lake, the northern part of Lower Klamath lake, Klamath marsh, and the region to the east; and the Modoc, occupying the region about Rhett lake and the southern end of Lower Klamath lake. One informant mentioned a third dialect, which he said was spoken by the people formerly living on Link river and about Linkville or what is now known as Klamath Falls. In view of the slight lexical differences between the Klamath and Modoc dialects, it seems very probable that if a third linguistic division did exist it was inconsiderable and not more than a sub-dialectic variation. At any rate the only linguistic units recognized by the people themselves are the two dialects spoken by the Klamath and the Modoc. The fact that the two divisions speak slightly differently, does not seem to appeal to the people themselves so much as the fact that they were in former times politically disunited, and were in fact, upon certain occasions at least, at war.

As nearly as could be determined the boundary between the Klamath and Modoc territories extended through the northern

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[2] This is the boundary generally claimed by the Klamath. One Paiute informant, however, claimed that the territory of his people extended as far west as Yam Say peak and the Black hills, thus including Sycan marsh in the Paiute country. Like Klamath informants he stated that the boundary passed a few miles east of Bly.

[3] Gatschet, Contrib. N. A. Ethn., II, gives Lutuami as meaning lake, *i.e.*, Tule lake, in the Achomawi or Pit River language. The people have no name for themselves other than maklaks, person, Indian. Maklaks is possibly the source of our word Klamath, the origin of which is unknown. The Klamath Lake people are called in their own language Eukshikni maklaks or Eukskni maklaks, at the lake people, from Eukshi, which denotes specifically Klamath marsh, but also the adjoining country, including the eastern shore of Upper Klamath lake. Eukshi appears to be derived from eush, lake. The Modoc are called Moatokni maklaks or Modokni maklaks, in the south people, from moatak, Tule lake. Moatak is a derivative from muat, south.

end of Horse Fly valley and Lockey Flat, passing in the vicinity of Keno Spring, and thence westward through, or in the vicinity of, the village of Dairy. It passed a short distance north of Bale's lake and Olene and appears to have left the whole of Lost River valley in the territory of the Modoc. It passed either along the eastern shore of, or through, Lower Klamath lake. Further than this no definite information was obtained concerning this secondary boundary.

ENVIRONMENT.

The natural environment of the Lutuami, a high, mountainous and volcanic region, filled with lakes and marshes, influenced their culture in many ways. The two lakes, Upper Klamath and Tule or Rhett lake, formed the centers of population for the two divisions, the Klamath and the Modoc. Along the western shore of these lakes, and of Lower Klamath lake, as well as along the high plateau to the east of Upper Klamath lake, there were considerable forests of conifers which provided material for canoes and houses as well as a part of the food supply. In fact the whole western portion of the territory is well forested. The eastern part, however, notably about Yainax agency and eastward, is to a great extent a semi-desert, sage-brush country. In this eastern region there are many fertile valleys, as for instance, along Sprague and Sycan rivers, but on the whole the territory is by no means so desirable for habitation as that about Upper Klamath lake and Klamath marsh, where the soil is very rich and productive. The old fault line in which Upper and Lower Klamath lakes and Klamath marsh are situated has existed so long that a large area has silted in and formed a very fertile country, which provided in aboriginal times an abundance of various tubers, seeds, and other vegetable foods. Among the most important natural features of this region are the great tracts of marshy land. These marshes are covered constantly with water from a few inches to several feet in depth. In these, particularly in Klamath marsh, is found the staple article of food among the Klamath, and to a certain extent also among the Modoc, the yellow water-lily, *Nymphia polysepala.* Large areas of marsh are completely covered with this water-lily to the ex-

clusion of almost everything else. The seeds of this plant, gathered and preserved in three different manners, as described in detail by Coville,[4] form the staple article of food and thus correspond to acorns used over the greater part of California. About Tule or Rhett lake and the smaller lakes of that vicinity there are fewer marshes and consequently a smaller supply of the water-lily. Thus the Modoc were much less abundantly supplied with this staple than were the Klamath, who are said to have had on Klamath marsh alone over ten thousand acres of these plants. The chief vegetable food of the Modoc seems to have been tubers and bulbs, notably camass and ipos.

The extensive lakes of this region naturally bring great numbers of water birds of various kinds, including swans, geese, ducks, and wading birds, the majority of which were used by the Indians as food and in various ways. The skins of swans, geese, and other birds with especially fine down, were made into feather blankets, swaddling clothes, etc. Fish were abundant in the lakes, salmon and salmon trout being especially esteemed by the Indians. The presence of this large supply of water birds and fish developed certain specialized implements for their capture. For taking birds there were what may be termed a ring-pointed arrow, and a special net. There were several methods of taking fish, the most important being by the large triangular dip-net used in the dug-out canoe, as shown in pl. 10.

The country provided also an abundance of the usual animals, such as deer, elk, antelope, and others used for food; and cóyotes, gray wolves, foxes, badgers, wildcats, rabbits, and various fur-bearing animals furnishing blankets and clothing.

BUILDINGS.

The houses of the Klamath and Modoc were of two kinds. In this region where the snow on the higher peaks is always in sight, and where it often reaches a depth of several feet in winter, a warm and durable house is necessary. This was provided by the semi-subterranean earth lodge, which was of the usual central California form, and had a pit from a foot to three or four feet

[4] Wokas, a Primitive Food of the Klamath Indians, Ann. Rep. Smithsonian Institution, 1902, 727-739.

in depth. Its conical roof of poles was covered with mats and brush and finally with a thick layer of earth. One of these lodges was sometimes as much as forty or fifty feet in diameter and from fifteen to twenty feet high. There was no door in the ordinary sense of the term, but the house was entered through an opening near the apex of the roof, which served the double purpose of door and smoke hole. To enter it was necessary to walk up on the sloping conical roof to the opening and climb down by means of a vertical ladder inside, or by means of steps cut into the center pole itself. In either case the steps were holes cut entirely through a vertical log. These houses are said to have been so warm that little heating was required. A small fire in the morning was sufficient for the day and another small fire in the evening heated it to a comfortable temperature which was maintained during the greater part of the night.

The summer house is a small structure of the "wickiup" or brush hut type (pl. 11, fig. 1). In most cases it is elliptical, or rectangular in ground plan, the axes of the ellipse or rectangle being anywhere from five by ten to ten by twenty-five feet. It is usually sufficiently high to permit one to stand erect in the center. It has sides which slope very abruptly to the ground, and a comparatively flat top. The framework is of willow poles stuck into the ground and brought together along the ridge-pole, to which they are bound securely. Cross pieces are bound along the sides to hold the poles in place. Three coats of matting are placed over this framework as a covering. The inner layer is of mats made of a kind of reed (pl. 25). Over this is placed a covering of mats made of the triangular stemmed tule, *Scirpus robustus* (pl. 23). On the outside is a layer of mats made of the circular-stemmed tule, *Scirpus lacustris* (pl. 24). These last are made by sewing the tule together with a number of parallel strings, except along the two ends of the mat, where ordinary twining of the tule is used. This twining at the two ends assists in holding the whole mat more securely together and prevents the sewing from tearing out. It is said by the Indians that if an ordinary mat made with tule warp and nettle string twining as weft, or with tule warp and tule twining as weft, were placed on the outside, it would leak more readily than the mat made by

sewing through the tule, as the water would run down the tule to the twining and there begin to soak in. In the sewed mat the water never leaves the straight stem of the tule but runs directly down to the ground. These mats are often made sufficiently wide to cover the side of a small house, and are always so placed that the tule stems run up and down the side of the house. On large houses it is necessary to have two or more courses after the manner of shingles. All these mats are bound to the framework of the structure by means of poles passing horizontally. This summer or temporary house is made with a door opening at the end. The smoke escapes through a slit along the ridge-pole.

With the summer house there is always a sun shelter made of poles covered with boughs, tule mats, or long weeds or grasses. This structure is usually near the temporary summer dwelling, and under it the meals are served and the greater part of the work of the women is done. Temporary summer houses and sun shelters are still found among the Klamath, but the permanent earth lodge is a thing of the past.

There are two other structures in use in this region, the two forms of sudatory. The ordinary sweathouse, the one most commonly used, is a very small dome-shaped structure, as shown in figure 1, covered with tule mats. These mats, or nowadays blankets, may form a permanent covering for the house, or may be put on it only when a sweat bath is being taken. These little structures range from four to eight feet in diameter and from three to four feet in height. The entrance is a small opening, just outside of which is the fireplace for heating the stones to make the steam for the bath. Inside, at the rear of the sweathouse, is a small pit, one or two feet in diameter and six or eight inches deep. This pit is filled with the heated stones above mentioned, which in themselves provide considerable heat and when the steam arises as water is thrown on the hot stones, a profuse perspiration is caused. The heat is conserved by carefully closing all crevices about the sweathouse. After remaining for some minutes in the steam and heat, the bather runs out and

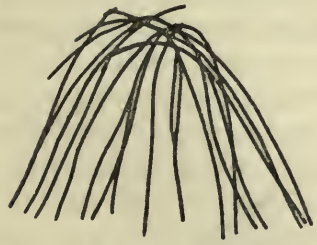

Fig. 1.—Framework of Sudatory.

plunges into the lake or a pool in the river or whatever water there may be at hand. This practice seems to have been medicinal. It was used as a habitual means of warding off disease as well as of curing it.

The second form of sweathouse was of similar size and construction except that it had a saddle roof which was covered with several inches of earth instead of a dome-shaped roof covered with matting. The door of this structure was placed at one end and was usually quite small. It was closed by a blanket or tule mat during the sweating.

There was no large "sweathouse" used for ceremonial purposes as in the Coast Range and Sierra Nevada region to the south. All ceremonies were held out of doors, chiefly in the summer.

IMPLEMENTS OF WAR.[5]

The influence of the unusual environment in which the Klamath and Modoc live is also very noticeable in the implements made and used by them, particularly in the various devices for the capture of fish and water birds.

The chief implements of war were the bow and arrow and a rather short javelin. The war bow was of the general type of the northwestern part of California, having a sinew back and sharply upcurved ends. The arrow was made in the ordinary manner, with light wood or cane shaft, hard wood foreshaft, and a moderately large obsidian, or sometimes flint, point.

The javelin or spear was fairly short. Its shaft was made of heavy wood. Its point, usually of obsidian, varied from two to six inches in length. These javelins, like war bows and arrows, are no longer in existence, though the obsidian heads are quite plentiful about old village and camp sites. They are now used by medicine-men in doctoring, and also by gamblers, who place them under the large mats used for gambling to insure good luck, especially in the game called sakalis.

HUNTING IMPLEMENTS.

The implements used in hunting animals were usually the bow and arrow. Ensnaring animals was little practiced by the

[5] The Klamath names of the various implements, etc., here described are given by Gatschet in his dictionary, *op. cit.*

Klamath and Modoc, though a noose set in a trail was sometimes used for deer. For taking the many species of water birds which are so abundant about the lakes, there were several interesting devices. The most specialized and unusual of these is an arrow made with a cane shaft and a point of mountain-mahogany. An ordinary wood-pointed arrow tends to go directly into the water at the angle at which it strikes the surface. A small ring, usually of sinew and pitch, but sometimes carved out of the foreshaft itself, being placed near the point, the arrow is deflected upward as it strikes the water, and skips along over the surface so that it is likely to kill at least one out of a flock of birds. The two forms of hunting arrows, the plain wood-pointed and the ring-pointed, together with the ordinary unbacked wooden bow and the tule quiver, are shown in pl. 20.

A long narrow net stretched in an upright position near the surface of the water is used in the capture of ducks and other water birds. As a flock of birds swims or flies into this net it is let down by men on the shore who hold the ropes which keep the upper edge of the net taut. By paddling out in a canoe the birds which are entangled in the meshes may be easily removed. As another means of taking large numbers of birds two men go out in a canoe at night and erect a large triangular net on the prow. A fire is kindled toward the middle of the canoe and the bright light causes the birds to fly from various directions toward the net.

The many-pointed fish spear, to be described later, is also used to a limited extent in the capture of water birds. They are speared from the canoe as they dive through the water.

FISHING IMPLEMENTS.

For fishing a number of specialized implements are used. The dug-out canoe (pl. 10),[6] while it is not used exclusively for fishing, is an absolute necessity to a fisherman's life. The dug-out is made from a log, usually fir, since the knots in the fir are much more durable and will not come out as do the knots in pine and cedar. The canoe is simply a log hollowed out by burning and adzing, and with the bottom sloping upward at an angle at each end. The angle of the slope at the prow is considerably

[6] See also Coville, *op cit.*, pl. 4, 5.

more acute than that at the stern. These canoes are from twelve to thirty feet in length but are very narrow in proportion, usually ranging between twenty and twenty-six inches in width. The opening of the canoe extends its full length and is usually two or three inches narrower than the full beam. Usually not over a quarter and never over a third of the log is cut away in making the canoe, the remaining three-quarters or two-thirds being then hollowed out to a thin shell varying from half an inch to a couple of inches in thickness, except at the prow and stern, where the thickness is considerably greater. The stern is somewhat thicker than the prow. The canoe is loaded with its greatest weight aft, which causes the prow to project considerably out of the water, and makes the canoe much easier to propel. This is carried to so great an extent that in the case of a single paddler in a large canoe the prow points upward at an angle of perhaps fifteen degrees from the surface of the water. When there is a second paddler, he kneels near the middle of the canoe, unless he is fishing or doing other work which requires that he be at the prow. The prow has always a somewhat greater overhang than the stern.

To propel a canoe one paddle each is required by the occupants. These paddles, always of cedar, vary in length from about three to five and a half feet, have handles an inch or so in diameter, and broad, very thin, blades. The paddle is dipped vertically and noiselessly, no pull being given until the blade is completely covered by the water. To lift it from the water again it is turned on its edge so that the width of the blade is almost parallel with the length of the boat. The handle of the paddle very often strikes the side of the canoe and in this manner, particularly at the stern where most of the paddling is done, the side of the gunwale is worn very smooth, showing a polished surface or even a notch, particularly on the right side of the older boats. Paddling is the ordinary method of propelling a canoe on deep water, for all such purposes as fishing, hunting, and general transportation. However, another and specialized implement is used, especially in wokas gathering. The water on the wokas marshes is shallow, rarely more than a couple of feet in depth, and the bottom consists of soft black mud completely

interlaced under the surface with the strong large roots of the water-lily. A pole of varying length is employed on these marshes and wherever there is occasion to travel over shallow water. The lower end of this pole is split for from four to six inches, and the two prongs thus made are turned sharply apart so that the angle between them is often as great as forty-five degrees. In this angle is set a small bar of bone or hard wood, thus making a cross-bar near the tips of the prongs. In pushing through the soft mud, the pole, on account of its split end, usually does not sink far before it strikes one of the strong roots of the water-lily, which then bears the stress of poling. Even if the pole does not strike a water-lily root, it sinks into the mud much less readily because of its split end.[7]

One of the most interesting devices connected with fishing is the large triangular dip-net used on the open water of the lakes or the larger deep streams. This net is used on a pair of poles held apart by a cross-bar near the vertex of the angle formed by them. The net itself is attached to the poles at the sides and to this cross-bar at the rear, the tips of the poles being connected by a strong string upon which the front of the net is fastened. The method of manipulating this net is shown in the series of figures in pl. 10. Only one man appears in these illustrations, but usually two men go out to fish, one sitting in the stern of the canoe and paddling, the other in the prow and manipulating the net. While the net is being dipped, the fisherman in the stern paddles quite rapidly along and makes a great noise, swishing the water back and forth in order to scare the fish near the stern toward the prow. He also has a couple of short sticks with which, just before the net is to be raised, he drums upon the sides of the canoe in order to frighten as many as possible of the fish toward the prow. The fisherman in the prow finally raises the poles and brings up the net, placing the angle at which the poles meet under the prow of the boat, which, as has been stated, has a long, flat, upward slope. The cross-bar of the net poles is slipped over the top of the prow so as to prevent the points of the poles from falling back into the water. In this manner the points of the poles project from the prow like two great horns. Their

[7] Coville, *op. cit.*, pl. 4.

tips are several feet from the surface of the water, so that the fish are prevented from jumping over the sides of the net and into free water. The man in the prow then hauls in the net, which tapers to a long pyramidal point. As he hauls the net in, it is laid over on the poles to the sides of the prow until finally the point of the net is reached. Here the fish are at last gathered together. It is then a simple matter to take them from the net and throw them either into the bottom of the boat itself or into coarse tule baskets made for the purpose. These baskets of tule are of two forms: a long canoe-shaped basket and the ordinary circular straight-walled basket like that shown in pl. 14, fig. 4. To manipulate a large net of this type, a canoe not less than sixteen or eighteen feet in length is required. Another net of this same type, but smaller dimensions, is used in a similar manner on the more shallow streams or in the shallow water of the lake.

A small gill-net of very fine string is also used. This is weighted with elliptical sinkers of stone and floated with small tule floats similar to those used in parts of northwestern California. This net is stretched across a stream, or may even be used in the shallower waters of the lake. Usually however its use is restricted to streams at times when the fish are running. It is used only for small species of fish. Still another form of net used in the smaller streams is a dip-net with a pole and circular hoop. This is ordinarily used from the bank, but may also be used from a canoe. It is employed in taking small fish such as suckers.

The string most used in this region is made of fiber from the bark of the nettle. A brown milkweed string is also made, but is little used. All string is two-ply. Nets are made with a very long slender shuttle (pl. 22, fig. 11), on mesh-sticks of various sizes, depending upon the kind of net desired. A small mesh-stick is shown in figure 7 of the same plate.

Fish are also taken with hook and line. The main part of the line is of the gray nettle string, but the brown milkweed string, which is said to be somewhat stronger and also less visible in the water, is used as a sort of leader. Fish-hooks are of two forms, both of bone. The smaller is a straight piece of bone pointed at both ends and attached to the line by means of sinew and

pitch at the middle. Such a hook with a fish-line as above described is shown in pl. 22, fig. 3. A small fish or some fish eggs are used as bait, being placed so as to completely cover the bar of bone. The other form of hook is a bone shank with two bone points, pl. 22, fig. 6. The two points form angles of twenty-five or thirty degrees with the shank. The three pieces of bone are secured one to another by means of sinew and pitch. This hook is used chiefly in fishing for large fish such as salmon and salmon trout, and is baited with minnows.

Three different kinds of fish spears are used. The ordinary harpoon with two detachable heads is found here and resembles in all respects the harpoon of the Californian peoples, except that the detachable points are not barbed as is the case in the greater part of California. The point, which is of bone, simply fits directly onto the end of the foreshaft with a plain socket, there being no barbs or other means of turning the point as the fish is gigged. The toggle-head is thrust completely through the fish so that the detachable point will slip off and turn at right angles, for it is attached at its middle to the string which holds it. A pair of such points are shown in plate 22, fig. 4. An unusual form of fish spear is also found. This consists of an ordinary pole handle with from half a dozen to fifteen hard wood points. These are held out in conical form by means of a small hoop which is placed inside of the cone and to which each of the hard wood points is securely bound. The use of this spear is chiefly for suckers and such other sluggish fish as are found in shallow water on the bottom of the lake. Since the water in these places is usually more or less muddy, it is impossible to see the bottom, but as the fish lies on the bottom bubbles arise from time to time, and the fisherman, having determined the approximate locality of the fish from these bubbles, carefully lowers this many-pointed spear to within a foot or even a few inches of the supposed location of the fish. Suddenly he jabs the spear and pins the fish to the bottom. With a second spear, provided nowadays with a double-pointed barbed iron head, he pierces the fish and brings it up.

STONE IMPLEMENTS.

Several forms of stone implements are quite commonly found among the Klamath. Most characteristic of these is the two-horned muller (pl. 21, fig. 2), used with the flat, very thin metate in grinding wokas, the chief food of the region. The process of grinding with these implements is shown in pl. 12, fig. 1. The muller is held so that the horns or ears point from the operator and the grinding is done on the stroke of the muller from the operator, the stroke toward the operator being very light indeed. A second form of muller, described by informants, but not now in use, has a loop instead of the two horns. No special ceremonial or religious significance seems to be attached to either of these forms. Another, very small metate and a small grinding stone or muller (pl. 21, fig. 1) are employed in the grinding of certain seeds which are parched and used as food. The motion in grinding with the small muller is circular, not backward and forward as in the case of the larger one. These small milling implements are also used by girls as playthings in the grinding of wokas and other seeds.

Small mortars and pestles are quite commonly used at the present time and are still made by the people of this region. They are used chiefly by old people whose teeth are poor, for grinding dried fish and meat, though they are also employed in grinding seeds. The pestles used with these mortars are more or less crude. Those shown in pl. 21, figs. 3 and 4 are exceptionally well fashioned. A typical mortar is shown in fig. 6 of the same plate.

Another special implement of stone is the maul (pl. 21, fig. 8). This, unlike the pestle, is always made with a decided conical form. It varies up to five inches or so in diameter, and is from six to perhaps ten inches in length. It was used in driving the elkhorn and mountain-mahogany wedges which were employed in splitting trees, particularly for canoe making, as has been already described. Neither the wedge nor any other elkhorn implement is now to be found in this region. Grooved sinkers of elliptical or triangular form are used on the gill net. One of these triangular sinkers is shown in pl. 21, fig. 7.

Another stone implement is the single-grooved, flat-bottomed arrow straightener, such as is shown in pl. 21, fig. 9. A perforated wooden arrow straightener, of the form shown in fig. 5 of the same plate, is still used.

Implements of obsidian and of flint are common. Arrowheads and large spear points, as also knives which were formerly fitted into wooden handles, are yet to be found. These points are found by the Indians in various parts of the country where they have been used and left by former inhabitants. They are chiefly employed at present as charms in medicine and gambling. A gambler may take a large obsidian knife or spear point and, after singing the proper song, place it under the large tule mat upon which the game is being played, to insure good luck. In addition to their use in medicine as charms they are also employed for purposes of scarification.

Stone pipes of several forms (pl. 22, figs. 8, 9, 10) are still used. The discoidal form shown in figure 10, which is quite unusual for the Pacific slope, appears to have been less used in aboriginal times than the obtuse-angled form shown in figure 8.

GAMES.

The Lutuami, like most aboriginal peoples, had many games for both adult and young. It will not be necessary to go into details here, as the subject has been treated by Dr. George A. Dorsey[8] and Mr. Stewart Culin.[9]

BASKETRY.

The basketry of the Klamath and Modoc, which is always twined, may be classified under two heads: soft or pliable basketry and stiff or rigid basketry. The former predominates very largely and all the finer baskets are made in this manner. The materials used for this sort of basketry are as follows. The skin of the leaves of the cat-tail tule forms the white material which is used as the groundwork of almost all of the finer baskets. The

[8] Certain Gambling Games of the Klamath Indians, Amer. Anthr., n. s. III, 14-27, 1901.

[9] Twenty-fourth Ann. Rep. Bur. Ethn., 136, 247, 291, 328, 479, 550, 659, 740, 1907.

skin of the circular tule is also used for the same purpose. It may be so cured as to have a greenish or a yellowish color. It may also be dyed by means of a mixture of blue mud and wokas shucks to a dead black. All this material is used as weft, the warp being the twisted brown skin of the circular tule. The unfinished basket shown in pl. 14, fig. 2, illustrates the uses of these weft and warp materials. Designs are usually worked out in the reddish brown roots of the tule, though the outer leaf skin of a certain jointed rush which provides a shiny, creamy white material is also used. For the finer baskets the quills of the porcupine, dyed yellow by means of a yellow moss, probably the widely used *Evernia vulpina,* are used. Baskets of this soft type are made in many different forms. Particularly of note are the cap (pl. 18, figs. 9-12), and the large flat parching and sifting basket, paLa (pl. 11, fig. 3); also the large gambling tray (pl. 11, fig. 2), which differs from the parching and sifting tray in that it is made of white material instead of brown and is finely decorated in one or more of the different color materials. The flat baskets used for parching and sifting purposes are almost always made with the brown tule for weft as well as warp, and are usually very simply ornamented. The use of this sifting basket is shown in pl. 12.[10] In fig. 1 is shown the actual process of grinding wokas on to the basket, and in fig. 2 the process of sifting. Soft baskets of various other forms are shown in pl. 15 and in pl. 18, figs. 1-8. In addition to these soft baskets made of twisted tule fiber, the Klamath make many larger and coarser baskets of unsplit tule. Notable among these are more or less conical burden baskets, which are sometimes made with hoops, and which usually have four rods running vertically along the outer surface in such a manner as to make a sort of wooden framework.[11] The large, flat, straight-walled storage baskets (pl. 14, fig. 4) are usually made entirely of tule, in the three-strand braided weave, though plain twining is also sometimes used. These are used for storing such foods as dried berries and fish. From the unsplit tule also are made mats, above described, which are one of the most characteristic things among

[10] See also Coville, *op. cit.,* pl. 7.

[11] *Ibid.,* pl. 8.

the Klamath. These mats may be made with both warp and weft of tule in plain twining, though the best mats are made with nettle-string weft.

Tule is also used in making one form of quiver, such as that shown in pl. 20, fig. 1. It is said that these tule quivers were used chiefly by people of moderate means, the more well-to-do class having quivers made of skin. Tule caps such as that shown in pl. 17, fig. 6, were worn by the men. For summer wear moccasins of buckskin, such as that shown in pl. 17, fig. 5, were always used, but for winter wear moccasins of tule (pl. 17, figs. 2, 4, and pl. 19, fig. 2) were employed. A layer of dry grass was placed in the bottom to make them warm, and it is said that one might in the dead of winter walk with comparative comfort through marshes where the water is extremely cold. With these tule moccasins are worn tule leggings, such as that shown in pl. 17, fig. 3. Another form of footwear is the circular snow-shoe of wood and rawhide (pl. 17, fig. 1). A similarly shaped but somewhat smaller shoe is worn in wading about in the mud of the marshes. The women also wore a cape or, more properly speaking, a blanket, made of shredded tule or of sage-brush bark, or of a combination of the two. Where the wokas grows close in shore, and where the water is shallow and other conditions such as a moderately hard bottom are favorable, the women often drag about canoe-shaped baskets or rafts, as they might be called (pl. 19, fig. 3), into which the wokas is gathered. The weight of the wokas of course sinks the basket down partially below the surface of the water, but it always manages to keep sufficiently above water to prevent the wokas from floating away.

Another special implement used in harvesting the water-lily is the spoon-shaped basket shown in pl. 13, fig. 2.[12] After the dehiscence of the pods of the water-lily the seeds with their coating form a mucilaginous mass which floats on the surface of the water. This mass is scooped up with the spoon and placed in a basket in the canoe. These seeds, called spō'kwas, are kept in water until used, since they lose their flavor if allowed to dry.

Another use for tule is in the making of rafts. While the dug-out canoe above described was the chief means of traveling from

[12] See also Coville, *op. cit.*, pl. 8.

place to place, a tule raft was sometimes used, particularly by war parties. Several large bundles of tule, sometimes two feet in diameter and eight or ten, or even fifteen feet in length, were lashed together to form a raft. It is said to have been propelled by lying down along the edges and really swimming the raft by dipping the hands into the water with a motion similar to that used in paddling.

One of the most characteristic features of the culture of the region is the flat triangular platter made of tule and used for serving food, particularly broiled or otherwise cooked fish and roasted meat. Such trays are shown in pl. 13, figs. 1, 4, 6, and vary greatly in size. Circular baskets of coarse tule, such as that in fig. 3 of the same plate, are more rarely found. Occasionally they are bound about the rim with a hoop. More or less flat trays of several other forms are also used. One such tray is shown in fig. 5 of the same plate.

Though not used at the present time, a tule sack was formerly made for the transportation and storage of wokas. This sack was made of unsplit tule, but was of sufficiently close weave to prevent the wokas from running through. These sacks were sometimes made so large that when filled with the wokas seed, which is comparatively light in weight, they were so heavy that a man of ordinary strength, or a woman, would not attempt to carry more than one at a time.

There are several forms of rigid baskets made with willow or other sticks, particularly the conical burden basket (pl. 16, fig. 3) which was used largely in gathering foods such as wild plums; and the flat, more or less triangular, openwork basket with a handle (pl. 16, figs. 1 and 2),[13] used as a sieve and as a grater as well as a general receptacle. In the loop handle this basket differs from most of those of similar form found in various parts of California. It is used for sifting the wokas after drying, the seeds passing through the interstices of the basket, and separating from the larger fragments of the pods. Also camass, ipos, and other roots and tubers are rubbed on this basket in order to grate off or scrape off the skin of the tuber. In addition to being made of round willow stems, these baskets are also made of the split roots

[13] See also Coville, *op. cit.*, pl. 8.

of the juniper (pl. 16, fig. 1). More or less globose or flatly cylindrical rigid baskets are used for general storage purposes. A seed-beater used in harvesting the seeds of grasses and flowering plants, and a fish trap of special form (pl. 19, fig. 1) are also made of rigid willow stems. Dilapidated willow burden baskets are used in warding off the effects of thunder. Such a basket is placed on top of a high pole set near a dwelling in order that no bad effects may come from the rumbling thunder overhead.

FIRE-MAKING.

The fire-making apparatus used by the people of this region is the usual drill, the upright twirler being made of an ordinary stick with a piece of very dry willow root bound at its end instead of a single piece of wood as in most regions. This piece of willow root twirled in a base block of cedar soon creates sufficient heat to generate the fire. The twirler must always be carried so as to keep it very dry, but the cedar base block needs no special care. In fact the canoe paddle, which is always made of cedar, may be used as a base block. A cup for fire-making is cut at a point either near the end of the handle or near the junction of the blade and handle and just above the line where the paddle is dipped into the water. The paddler, therefore, always has the base block to his fire drill with him. Connected with fire is the torch made of tightly bound dry sage-brush bark (pl. 22, fig. 1), which is employed whenever a portable light is needed.

MISCELLANEOUS.

The people of this region, particularly the older people, are noticeable for the deformation of their heads. The head is flattened usually from directly above the eyebrows, for some distance back, in some cases even to the very top of the head. The back of the head also is flattened and in extreme cases the front and back flattening meet to form a sharp peak at the top of the head. This flattening was done while the child was in the cradle. For a short time after birth the infant was lashed into a soft tule cradle. After some days the child was placed in a cradle such as that shown in pl. 14, fig. 3, made of more rigid materials. In order to keep the head from bobbing about as the mother

walked with the cradle on her back, it was bound down with a piece of buckskin, and there was in some cases a harder material used in connection with the buckskin, such as a small piece of board, or a piece of willow basketry. These headbands were, of course, properly padded to prevent actual injury to the child's head, but the pressure was sufficient and was so adjusted that it caused a decided flattening of both the front and back of the head. The younger generation has not been subjected to this cradle treatment and does not show the flattening, but among the older Klamath and Modoc the flattening is very pronounced. Probably due to the influence of the Shoshonean peoples to the east, the cradle board finds some use among the Lutuami, but the woven tule and willow cradles are typical of the region.

In addition to the various articles of dress mentioned in speaking of the uses of tule, the Klamath and Modoc make a belt either from the fiber of the inner bark of certain trees or from human hair. These are worn by the women in every-day dress. Plate 17, fig. 7, shows one of these belts of fiber.

As a brush for dressing the hair the tail of the porcupine is used (pl. 22, fig. 2). Usually the longer spines are removed and the skin of the tail is then stuffed either with shredded tule or with shredded sage-brush bark. In dressing the hair the brush is drawn through it directly against the points of the spines, which, as may be seen from the illustration, lie almost flat.

As before mentioned the Klamath have many vegetable foods in addition to the wokas. Most of these are derived from small plants, but the pine furnishes one. The inner bark of some of the species of pine is much esteemed as a food and there is a special implement used in taking it. This knife-like bone implement (pl. 22, fig. 5) is used in separating the inner from the outer bark, and is usually made from a deer rib or from a rib of one of the other large animals.

SUMMARY.

The Klamath and Modoc people possess a specialized culture, due largely to the extensive use of tule in the making of houses, basketry, and various utensils. The only baskets made of a harder material are conical burden baskets, triangular sifters, a

fish basket, and one or two others. Twining is the only technique used, all coiled baskets coming from this region being extraneous to the true native culture. The majority of the conical burden baskets made of willow or hazel which are in use among the Klamath are made by themselves, though they do purchase from the Shasta to the southwest a burden basket which is more nicely finished than their own.

Together with this very specialized tule culture, resulting from the life of the people upon the immediate lake shore, go water foods, particularly wokas and fish, and the special implements devoted to the gathering of the wokas and to the capture of various animals, birds, and fish. Such for instance are the peculiar duck arrow, the large dip-net, the net used at night in connection with a light in the canoe for catching ducks and other water birds, the many-pointed fish spear, the two forms of bone hooks, the dug-out canoe, and the forked pole for propelling it in shallow water. The peculiar stone implements, such as the two-horned muller, L-shaped and discoidal pipes, and triangular net-sinker, are also noteworthy.

The specialization of culture in this region is very striking indeed when it is compared with the culture of surrounding peoples, as for instance, the Paiute to the east, where coiled basketry predominates and tule work is almost unknown, and with that of the Indians of the Upper Columbia river region to the north, whose culture was very largely influenced by the buffalo or plains Indian culture. A comparison with the Oregon Indians is difficult not only because the Oregon cultures are comparatively little known, but because the majority of Oregon Indians, owing to their habitat, showed either a coast or a desert culture, which is not readily comparable with the inland lake environment and culture of the Klamath and Modoc. The Indians in certain respects most similar to the Lutuami in culture lived down the Klamath river in the northwestern part of California. Here are found such things as the stone maul and the large triangular fish net. Here also the basketry is entirely twined and in a large measure of comparatively soft materials; and the willow or hazel burden baskets are very similar in their general appearance, form, and particularly in the border finish.

Dug-out canoes, though of a somewhat different form, are also made in northwestern California, and in general the art of working wood is well developed there. In fact, it is so well developed that the most characteristic wooden implements of northwestern California are not paralleled among the Klamath and Modoc or any of the California Indians. The Klamath and Modoc also have the earth house and the tule mat house, the tule raft, and the tule moccasin, and they also burn the dead, in all which respects they differ from the Indians of northwestern California. In these respects they agree with the Indians of a large part of the great Central California culture area, sometimes more closely with peoples that are near-by, such as the adjacent Achomawi, sometimes, especially in single characteristics, with those more distant. On the whole, however, the Lutuami must be placed in a class by themselves, at least as regards their material culture, with their specialized tule and stone objects, and implements for use on the water, and their characteristic foods. In large part this specialization is the outcome of habitat in a restricted and unusual environment of large, shallow, inland lakes.

EXPLANATION OF PLATE 10.

Fig. 1.—Large triangular dip net at rest in canoe.

Fig. 2.—Net being dipped.

Fig. 3.—Net being raised.

Fig. 4.—Frame of net being fixed at prow of canoe preparatory to gathering in the net.

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CANOE AND DIP-NET.

EXPLANATION OF PLATE 11.

Fig. 1.—Summer house of tule mats.

Fig. 2.—Gambling tray of soft tule materials. Museum number 1-12732. Diameter 60 cm.

Fig. 3.—Flat basket of soft tule materials, for parching and sifting. Museum number 1-12465. Diameter 67 cm.

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SUMMER HOUSE.

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BASKETRY TRAYS FOR GAMBLING AND SIFTING.

EXPLANATION OF PLATE 12.

Fig. 1.—Woman grinding wokas seeds with two-horned muller on a flat slab laid on a sifting basket.

Fig. 2.—Woman sifting wokas in a flat soft basket.

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GRINDING AND SIFTING WOKAS SEEDS.

EXPLANATION OF PLATE 13.

Fig. 1.—Triangular platter of tule basketry in plain twining. Used for serving food and for fanning coals in parching wokas. Museum number 1-12693. Length 31 cm.

Fig. 2.—Spoon of tule basketry, used for gathering floating wokas seeds. Museum number 1-12772. Length 38 cm.

Fig. 3.—Flat circular basket of tule used as a food tray. Museum number 1-14295. Diameter 43 cm.

Fig. 4.—Triangular platter of tule basketry in plain twining. Used for serving food. Museum number 1-12695. Length 72 cm.

Fig. 5.—Two-handled tray of tule basketry. Museum number 1-14125. Length 64 cm.

Fig. 6.—Triangular platter of tule basketry in plain twining. Used for serving food. Museum number 1-14272. Length 34 cm.

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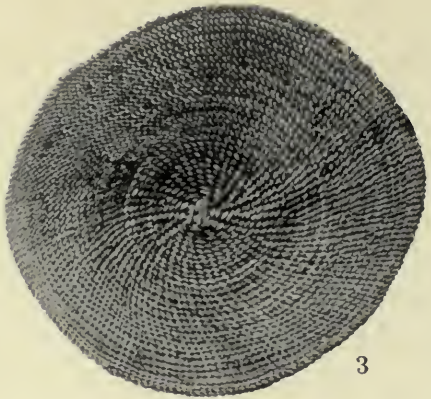

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FOOD RECEPTACLES AND DIPPER OF TULE BASKETRY.

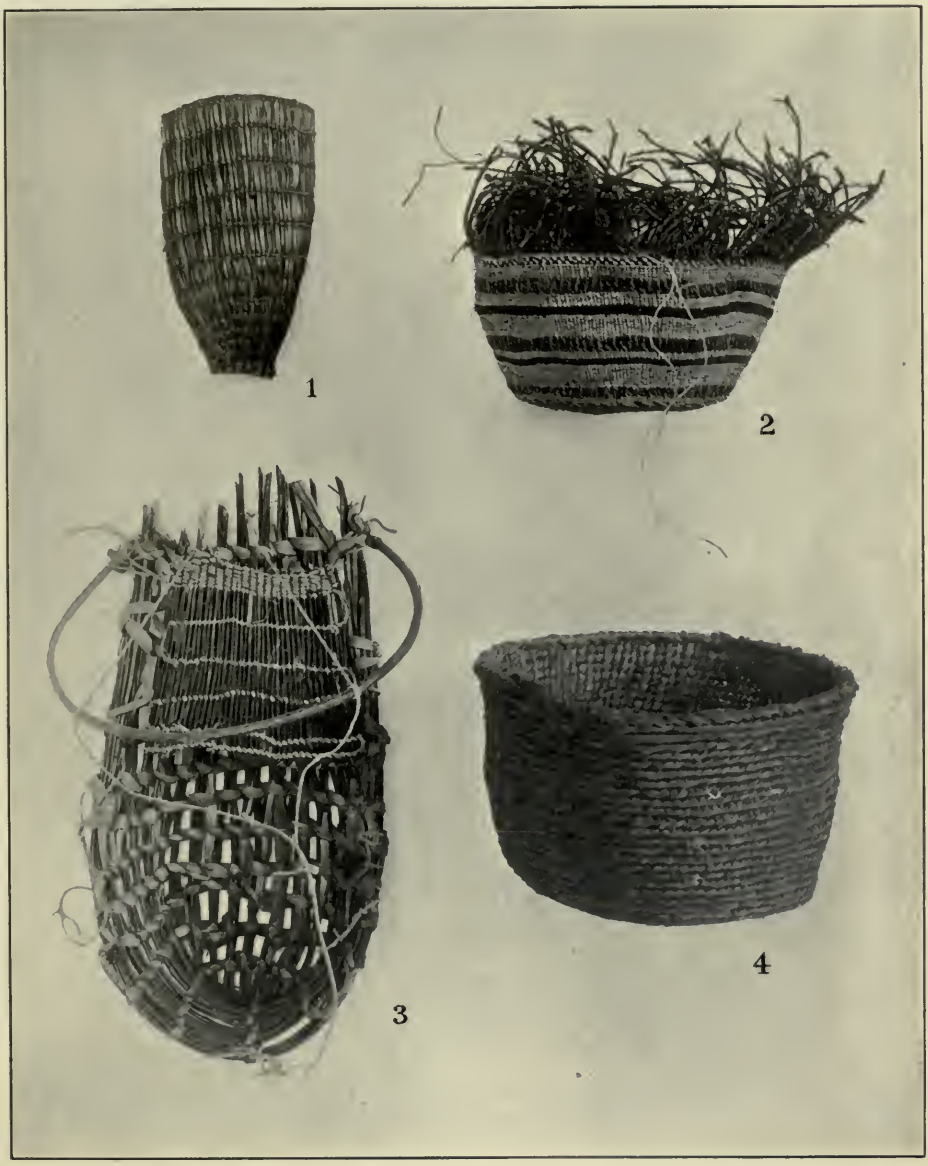
EXPLANATION OF PLATE 14.

Fig. 1.—Pouch of plain twined tule basketry. Museum number 1-14293. Length 27 cm.

Fig. 2.—Unfinished basket of soft tule materials, in plain twining, showing nature of warp and weft. Museum number 1-12230. Diameter 34 cm.

Fig. 3.—Cradle of tule. Museum number 1-12676. Length 58 cm.

Fig. 4.—Storage basket in three-strand braiding, warp and weft of tule. Carried also in the canoe as a receptacle for fish taken from the net. Museum number 1-14286. Diameter 35 cm.



POUCH, CRADLE, AND BASKETS OF TULE.

EXPLANATION OF PLATE 15.

Fig. 1.—Plain-twined basket of soft tule materials. Museum number 1-14244. Diameter 35 cm.

Fig. 2.—Plain-twined basket of soft tule materials. Museum number 1-9171. Diameter 25 cm.

Fig. 3.—Plain-twined basket of soft tule materials. Museum number 1-14245. Diameter 55 cm.

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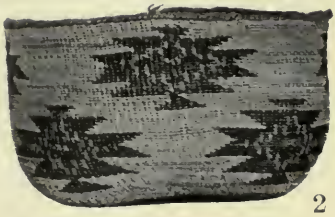

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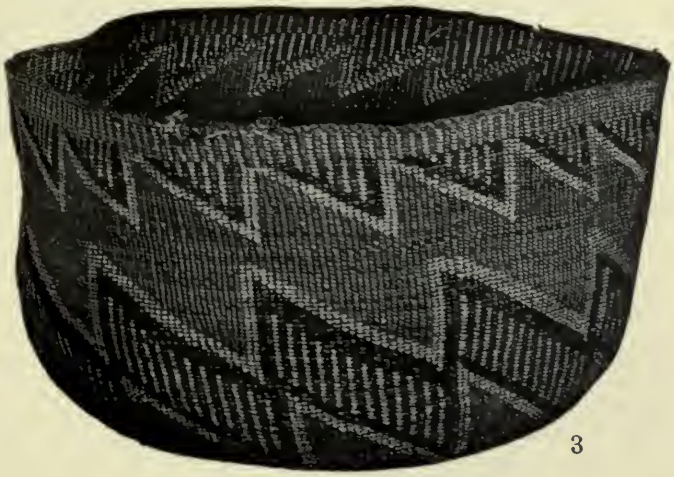

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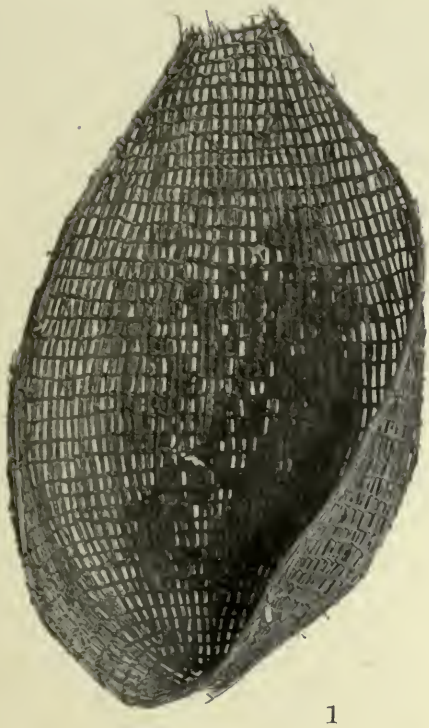
BASKETS OF TULE.

EXPLANATION OF PLATE 16.

Fig. 1.—Triangular openwork basket in plain twining of juniper root splints, used as a general receptacle; also as a sifter for wokas seeds and as a grater to remove the skins of roots and tubers. Museum number 1-12314. Length 82 cm.

Fig. 2.—Similar basket made of willow sticks. Museum number 1-12630. Length 75 cm.

Fig. 3.—Conical burden basket made in plain twining of rigid materials. Museum number 1-12391. Diameter 53 cm.



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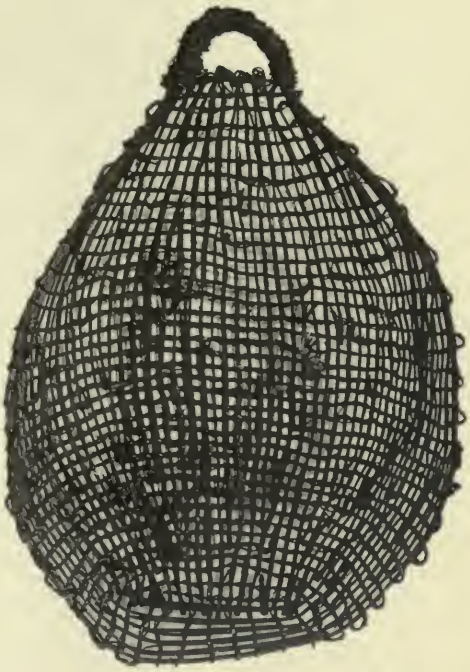

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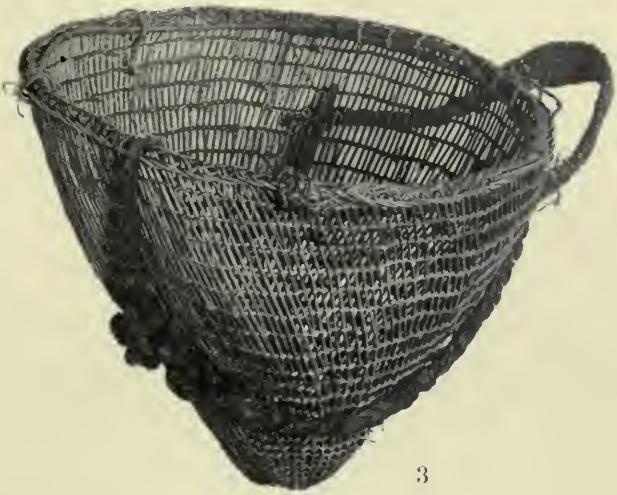

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SIFTING AND CARRYING BASKETS.

EXPLANATION OF PLATE 17.

Fig. 1.—Snowshoe made of a hoop and strips of skin. Museum number 1-12633 b. Length 41 cm.

Fig. 2.—Man's moccasin of plain twined tule basketry, for winter wear. Museum number 1-12839 a. Length 42 cm.

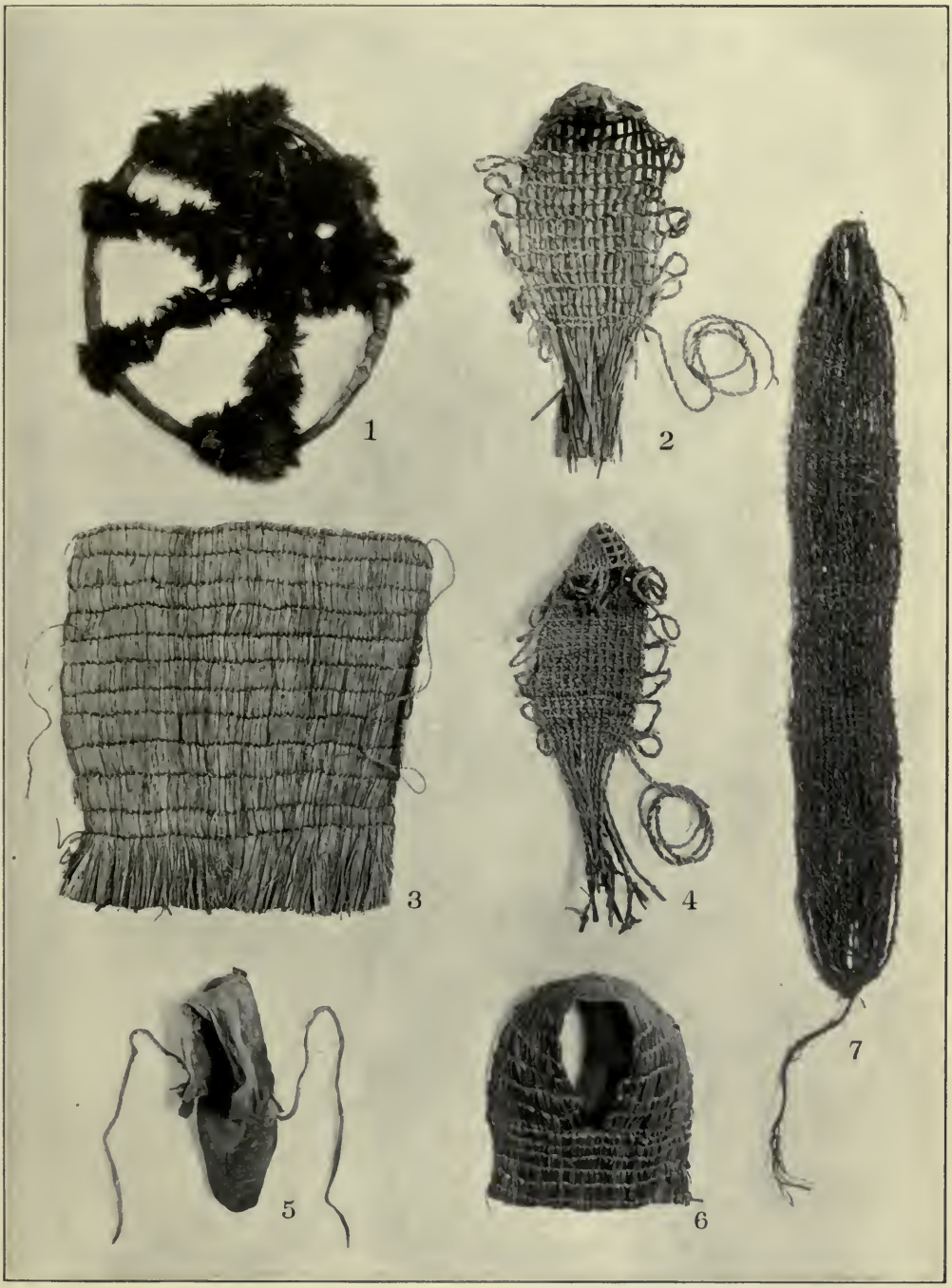
Fig. 3.—Legging of plain twined tule. Museum number 1-12774. Length 44 cm.

Fig. 4.—Woman's moccasin of plain twined tule, for winter wear. Museum number 1-12773 a. Length 45 cm.

Fig. 5.—Buckskin moccasin for summer wear. Museum number 1-12508 b. Length 25 cm.

Fig. 6.—Man's cap or sunshade of plain twined tule. Museum number 1-12838. Length 28 cm.

Fig. 7.—Woman's belt made of strips of bark fiber. Museum number 1-14138. Length 86 cm.



SNOWSHOE, MOCCASIN, LEGGING, CAP, AND BELT.

EXPLANATION OF PLATE 18.

Fig. 1.—Plain-twined tule basket. Museum number 1-12385. Diameter 20 cm.

Fig. 2.—Plain-twined tule basket. Museum number 1-12469. Diameter 17 cm.

Fig. 3.—Plain-twined tule basket. Museum number 1-12688. Diameter 14 cm.

Fig. 4.—Plain-twined tule basket. Museum number 1-12461. Diameter 14 cm.

Fig. 5.—Plain-twined tule basket. Museum number 1-12460. Diameter 21 cm.

Fig. 6.—Plain-twined tule basket. Museum number 1-12459. Diameter 21 cm.

Fig. 7.—Plain-twined tule basket. Museum number 1-12802. Diameter 24 cm.

Fig. 8.—Plain-twined tule basket. Museum number 1-14229. Diameter 19 cm.

Fig. 9.—Woman's hat of plain-twined tule basketry. Museum number 1-12738. Diameter 22 cm.

Fig. 10.—Woman's hat of plain-twined tule basketry. Museum number 1-14230. Diameter 18 cm.

Fig. 11.—Woman's hat of plain-twined tule basketry. Museum number 1-12561. Diameter 22 cm.

Fig. 12.—Woman's hat of plain-twined tule basketry. Museum number 1-12335. Diameter 20 cm.

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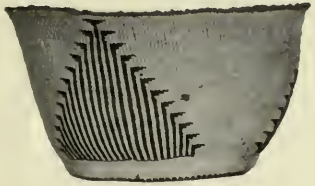

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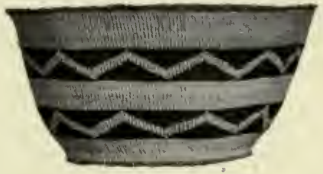

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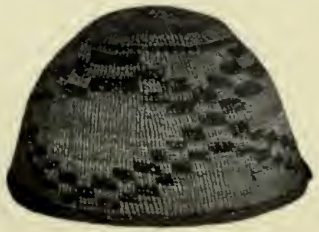

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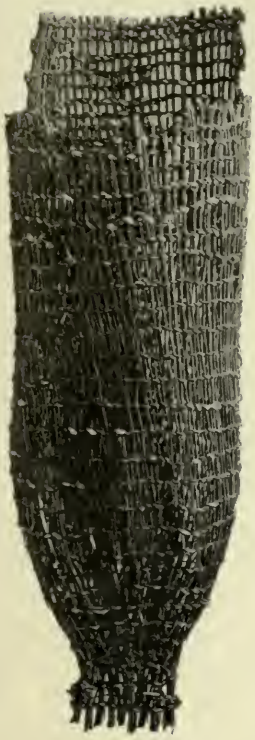
BASKETS AND BASKETRY HATS.

EXPLANATION OF PLATE 19.

Fig. 1.—Fish-trap of plain-twined basketry. The warp consists of willow rods. Museum number 1-12247. Length 89 cm.

Fig. 2.—Tule moccasin for winter wear, in use.

Fig. 3.—Large canoe-shaped basket of tule, in openwork plain twining, used as a floating receptacle in gathering wokas pods. Museum number 1-12639. Length 141 cm.



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FISH TRAP AND TULE MOCCASIN.

3

BASKET FOR GATHERING WOKAS.

EXPLANATION OF PLATE 20.

Fig. 1.—Quiver of tule, plain-twined. Museum number 1-12719. Length 81 cm.

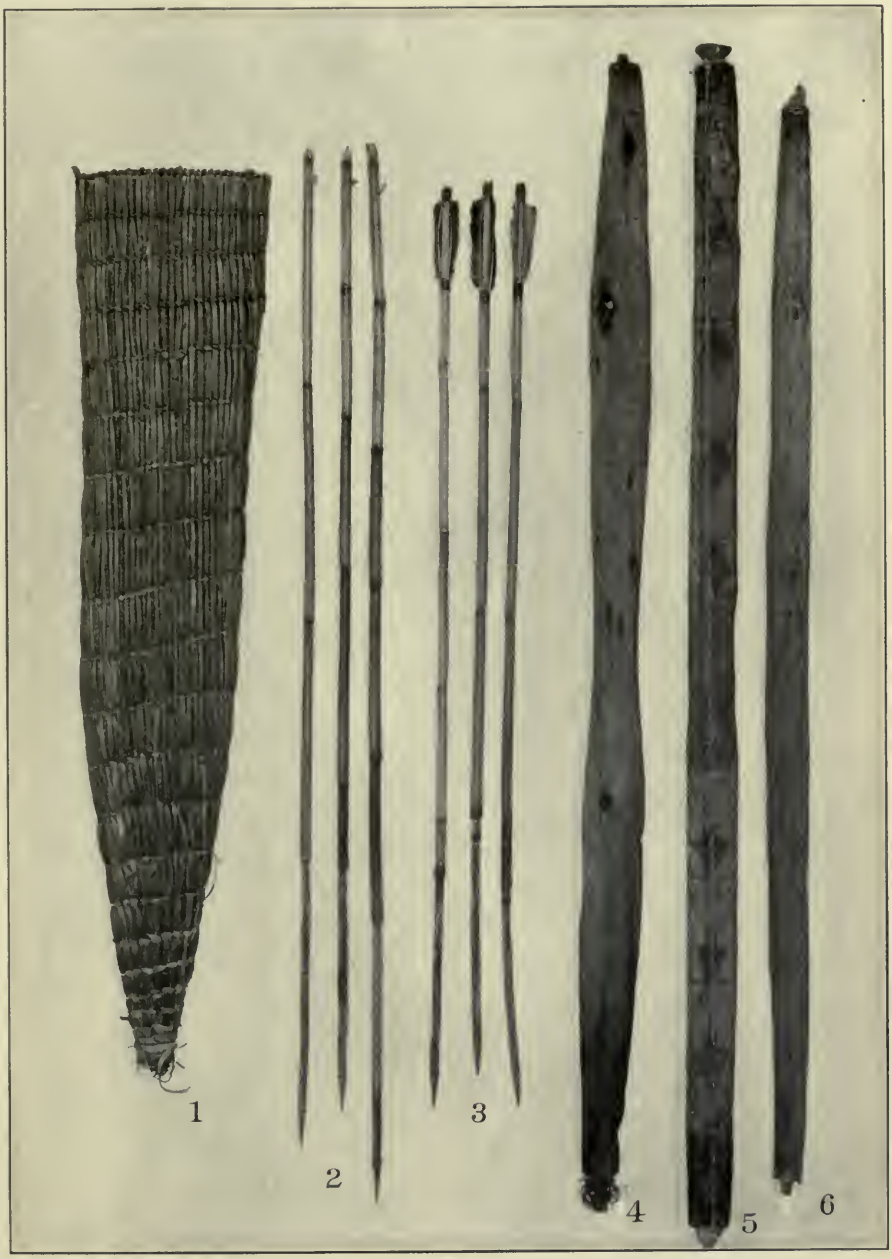
Fig. 2.—Hunting arrows with shafts of cane and points of mountain mahogany. The points are ringed in order to cause the arrows to skip along the surface of the water. Museum numbers 1-12776 b, c, k. Length 88 to 96 cm.

Fig. 3.—Feathered hunting arrows with shafts of cane and points of mountain mahogany. Museum numbers 1-12812 a, b, c. Length 81 to 85 cm.

Fig. 4.—Unbacked wooden bow. The outer side is shown. Museum number 1-12646. Length 105 cm.

Fig. 5.—Unbacked wooden bow. The inner side, which is shown, is painted. Museum number 1-12868. Length 109 cm.

Fig. 6.—Unbacked wooden bow. The outer side is shown. Museum number 1-12867.. Length 100 cm.



QUIVER, ARROWS, AND BOWS.

EXPLANATION OF PLATE 21.

Fig. 1.—Small muller. The base is flat. The hemispherical upper surface is shown. Museum number 1-12942. Diameter 9 cm.

Fig. 2.—Two-horned muller. Museum number 1-4540. Diameter 15 cm.

Fig. 3.—Pestle for grinding dried fish, meat, and seeds. Museum number 1-12907. Length 29 cm.

Fig. 4.—Pestle for grinding dried fish, meat, and seeds. Museum number 1-12932. Length 25 cm.

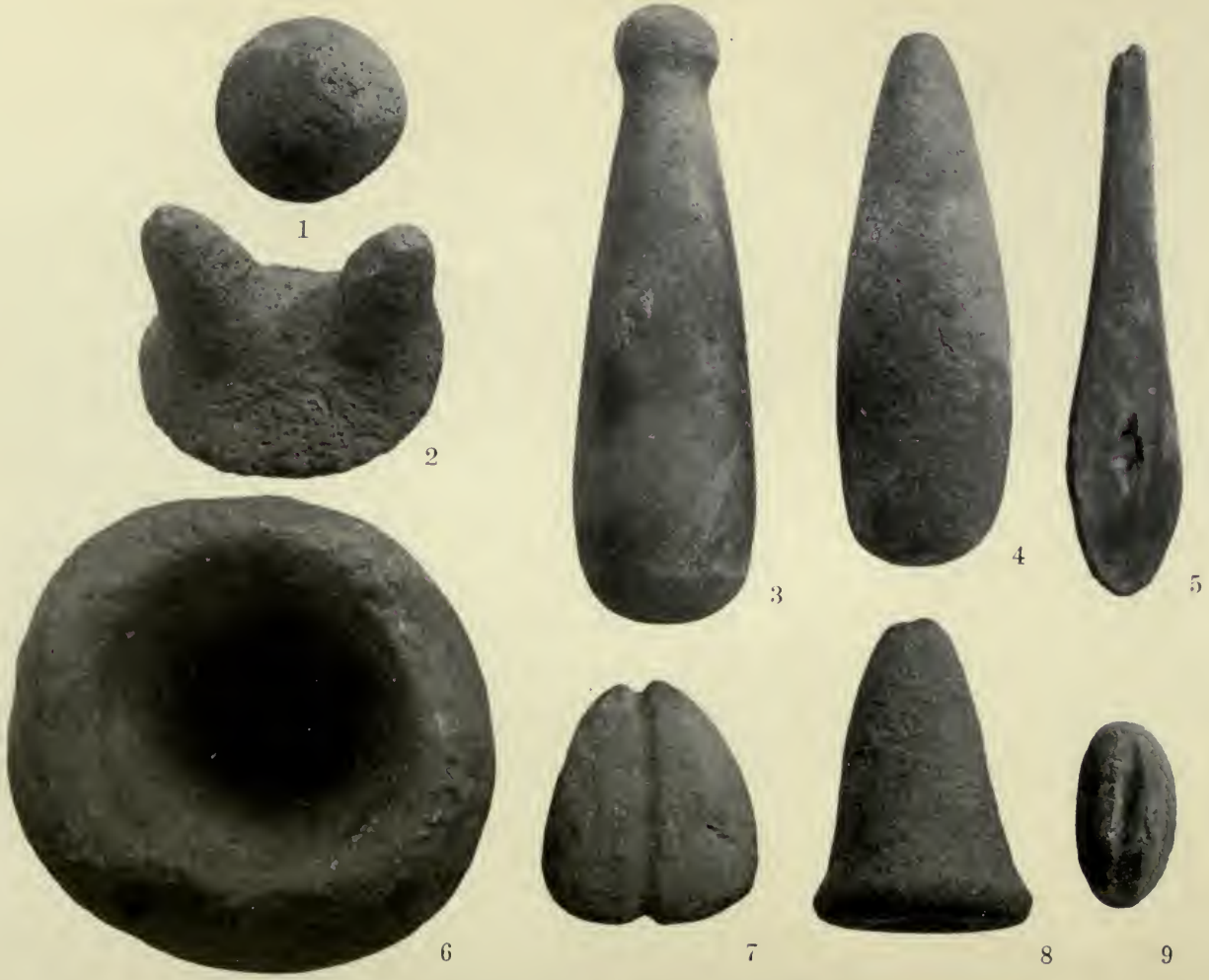
Fig. 5.—Perforated arrow-straightener of wood. Museum number 1-12628. Length 26 cm.

Fig. 6.—Mortar for grinding dried fish, meat, and seeds. Museum number 1-12953. Diameter 23 cm.

Fig. 7.—Grooved triangular sinker for gill net. Museum number 1-12880. Length 12 cm.

Fig. 8.—Maul for driving wedges. Museum number 1-12949. Length 15 cm.

Fig. 9.—Longitudinally grooved arrow-straightener and polisher of stone. Museum number 1-12914. Length 9 cm.



OBJECTS OF STONE, AND WOODEN ARROW-STRAIGHTENER.

EXPLANATION OF PLATE 22.

Fig. 1.—Torch of sagebrush bark. Museum number 1-12815. Length 71 cm.

Fig. 2.—Comb made of the tail of a porcupine. Museum number 1-12678. Length 21 cm.

Fig. 3.—Fishhook and line. The hook consists of a straight piece of bone pointed at both ends. Museum number 1-12755. Length of hook 8 cm.

Fig. 4.—Pair of bone harpoon points, partly covered with pitch, for spearing fish. Museum number 1-12768. Length of points 8 and 10 cm.

Fig. 5.—Bone knife for separating inner and outer bark of pine. Museum number 1-12682. Length 28 cm.

Fig. 6.—Pair of double-pointed bone fishhooks. Museum number 1-12763. Length of shank 12 cm.

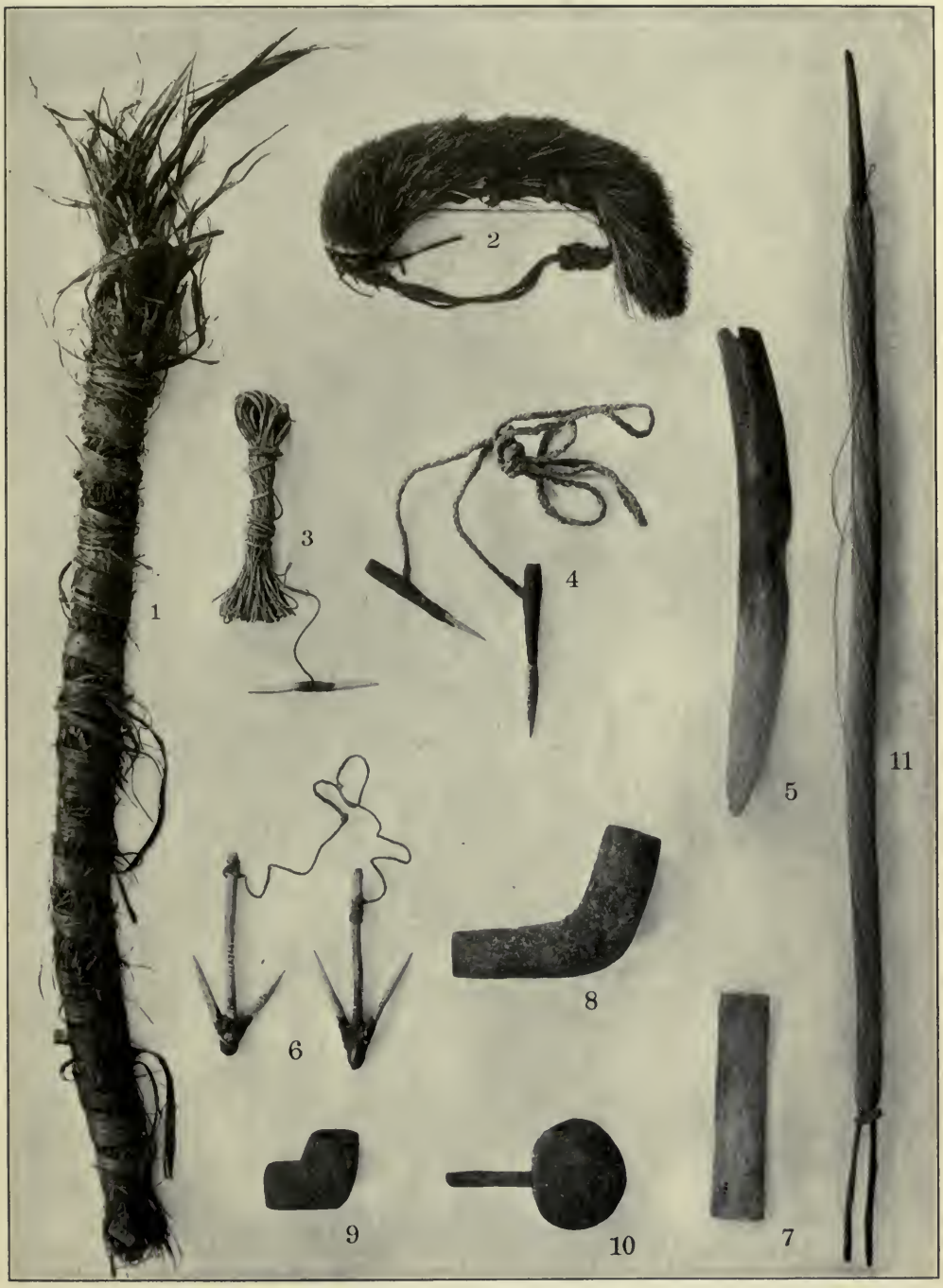
Fig. 7.—Bone mesh-measure for making nets. Museum number 1-12680. Length 13 cm.

Fig. 8.—Obtuse-angled pipe bowl of stone. Museum number 1-12382. Height 9 cm.

Fig. 9.—Stone pipe bowl. Museum number 1-12580. Height 4 cm.

Fig. 10.—Pipe with discoidal bowl of stone and short wooden stem. Museum number 1-14137. Height 11 cm.

Fig. 11.—Shuttle with string for making nets. Museum number 1-12871. Length 70 cm.



TORCH, COMB, FISHHOOKS, HARPOON POINTS, BONE KNIFE, MESH-MEASURER, PIPES, AND NETTING SHUTTLE.

EXPLANATION OF PLATE 23.

Part of plain-twined mat of stems of tule, *Scirpus robustus*, used as the middle layer of the matting which covers houses. Museum number 1-12652. Distance between courses of nettle string weft 7 cm. Size of mat, 156 × 240 cm.

TULE MAT.

EXPLANATION OF PLATE 24.

Part of large mat of tule, *Scirpus lacustris*, sewn together with parallel strings. By sewing instead of twining the water is prevented from entering the house thatch, of which this mat forms the outer layer. At the edge of the mat, twining of tule fiber is used. Museum number 1-12781. Size of mat, 166 × 300 cm.

TULE MAT.

EXPLANATION OF PLATE 25.

Part of a mat made in plain twining of reed. Used as the inner layer of the covering of houses. Museum number 1-12554. Distance between courses of weft 11 cm. Size of mat, 143 × 390 cm.

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